

**REMARKS**

Claims 1 through 5 are now pending in the application. Claim 1 has been amended, in part, to incorporate the feature that a thin film of steam reforming catalyst is supported on the inner wall of the first reactor, and in part to clarify that the tubular reactor (14) comprises at least one reformer tube having an inner wall and an outer wall. Support for this amendment can be found at least on page 1, lines 4-11, of the specification. Claim 2 has been amended to more particularly define the claimed invention. Claims 3-5 have been added to recite additional features of the instant invention. Support for new Claim 3 can be found at least on page 3, paragraphs 3 and 4 of the specification. Support for new Claim 4 can be found at least on page 4, lines 1-4 of the specification. Support for new Claim 5 can be found at least on page 1, lines 4-11 of the specification. Accordingly, no new matter has been introduced by these Amendments. In light of the following Remarks, Applicants respectfully request reconsideration of this application and allowance of the claims to issue.

**Obviousness Rejections under 35 U.S.C. § 103**

The Office Action has rejected Claims 1 and 2 under 35 U.S.C. § 103(a) as allegedly being obvious and unpatentable over the combined teachings of Dybjaer in view of U.S. Patent No. 5,167,865 to Igarashi *et al.* More specifically, the Office Action contends that it would have been obvious to one of ordinary skill in the art to replace the catalyst filled tubes or packed catalyst bed of the first and second reactors of Dybjaer with a reactor having a thin film of the catalyst supported on the walls of the reactor as taught by Igarashi *et al.* As set forth below, Applicants respectfully traverse the rejection.

A proper *prima facie* case of obviousness must satisfy at least two requirements. First, the art of record must teach or at least suggest the claimed invention as a whole. Second, there must be a reasonable expectation of success and requisite motivation to undertake the modifications proposed in the rejection. The present Office Action has not satisfied the requirements of a *prima facie* case of obviousness.

First, the Office Action's alleged combination of Dybjaer and Igarashi does not provide the requisite motivation for one of ordinary skill in the art to arrive at the process of Applicants amended Claim 1.

The Office Action acknowledges that Dybjaer at least fails to disclose a reactor having a thin film of steam reforming catalyst supported on the walls of a reactor. *See* Office Action, page 3, lines 11-14. To satisfy this acknowledged deficiency in the teaching of Dybjaer, the Office Action then looks to the teaching of Igarashi for guidance. However, it is not enough to combine references without some objective reason to do so. The Office Action points to nothing in Dybjaer that suggests a thin film of steam reforming catalyst can be supported on the inner wall of Dybjaer's reactor. Rather, the Office Action makes the unsupported allegation that it would have been obvious to one of ordinary skill in the art to replace the catalyst filled tubes or packed catalyst bed of the first and second reactors of Dybjaer with a reactor having a thin film of catalyst supported on the walls of the reactor as taught by Igarashi *et al.*

Notably absent from this statement is a precise identification of a suggestion, teaching or motivation in these prior art references that would lead one of ordinary skill in the art to combine the references. Combining prior art references without evidence of such suggestion, teaching or motivation is an impermissible hindsight reconstruction and simply takes the inventor's disclosure as a blueprint for piecing together the prior art in an effort to defeat patentability. *See In re Dembiczak*, 50 U.S.P.Q.2d 1614 (Fed. Cir. 1999) (copy attached as Exhibit "A").

Notwithstanding the lack of motivation to undertake the modifications proposed by the instant rejections, the combined teachings of Dybjaer in view of Igarashi also fail to provide the Applicants' claimed process as a whole. Applicants' Claim 1, as amended, recites a process comprising, in part, passing a process gas of hydrocarbon feedstock through a first reactor (10) having an inner wall and an outer wall, wherein a thin film of steam reforming catalyst is supported on the inner wall of the reactor (10), and wherein the reactor (10) is in a heat conducting relationship with a hot gas stream of flue gas. Claim 1 further recites passing effluent

from the first reactor (10) to a subsequent tubular reactor (14) comprising at least one reformer tube having an inner wall and an outer wall and being provided with a steam reforming catalyst, wherein the steam reforming catalyst is a thin film of steam reforming catalyst supported on the inner wall of the at least one reformer tube and/or steam reforming catalyst pellets and wherein the at least one reformer tube is heated by burning of fuel, thereby obtaining a partially steam reformed gas effluent and the hot gas stream of flue gas.

Dybjaer only discloses a method of processing a hydrocarbon feedstock in the presence of a steam reforming catalyst, said method comprising the steps of passing the hydrocarbon feedstock through a first reactor (*i.e.*, a pre-reformer), passing the effluent from the first reactor to a subsequent tubular reactor (*i.e.*, a primary reformer), passing the effluent from the tubular reactor to an autothermal reformer (*i.e.*, secondary reformer), and withdrawing a product gas from the autothermal reformer. In contrast to Applicants' Claimed process, and as recognized by the instant Office Action, there is no teaching or suggestion in Dybjaer to provide a reactor having a thin film of steam reforming catalyst supported on a wall of a reactor.

Furthermore, notwithstanding this acknowledged deficiency, Dybjaer similarly fails to teach or suggest using a hot gas stream of flue gas from a tubular reactor to provide heat to another reactor in the process, much less to provide heat to a reactor having a thin film of steam reforming catalyst supported on the inner wall thereof. To this end, Applicants' use of the waste heat from the tubular reformer flue gas enables feedstock to be pre-heated and pre-converted in the first reactor, thus resulting in the ability to utilize a smaller tubular reformer and to provide a reduction in undesired steam export. Accordingly, excess heat from exhaust gases in the tubular reformer can be used for pre-forming of the feedstock rather than production of steam for purposes other than reforming. This advantage is neither taught or suggested by the disclosure of Dybjaer.

With respect to Igarashi *et al.*, the deposition of a catalyst on a gas-impermeable boundary member is disclosed. However, Igarashi *et al.* is only concerned with producing boundary members with a catalyst deposited on the boundary member in order to stack the

boundary members into a reactor, as indicated in Figures 1 and 2. To this end, even assuming *arguendo* that the disclosure of Igarishi would have motivated a skilled artisan to stack reactor tubes, which it would not, there still is no motivation or suggestion in Igarashi to deposit a thin film of steam reforming catalyst on the inner surface of a reactor tube. In fact, Igarashi actually teaches away from this concept in so far as the only mention of a tubular gas impermeable member is for use in providing cylindrical conductive heating areas and not for providing cylindrical heat reforming areas. *See*, Col. 4, lines 51-65. Simply put, Igarashi only suggests the use of a tubular gas impermeable member for forming cylindrical conductive heating areas which necessarily results in the catalyst being deposited only on the outer surface of the reactor tube and not on the inner surface of the reactor tube.

Moreover, while Igarishi does suggest the use of a circulating heating medium that has been preheated in a furnace, there is no teaching or suggestion by Igarishi to use a hot gas stream of flue gas from a tubular reactor to provide heat to a first reactor, much less to provide heat to a first reactor having a thin film of steam reforming catalyst supported on the inner wall thereof as recited in amended Claim 1. Once again, by Applicants' use of the waste heat from the tubular reformer flue gas, feedstock can be pre-heated and pre-converted in the first reactor, thus resulting in the ability to utilize a smaller tubular reformer and a reduction in undesired steam export. Accordingly, excess heat from exhaust gases in the tubular reformer can be used for pre-forming of the feedstock rather than production of steam for purposes other than reforming. This advantage is neither taught or suggested by the disclosure of Igarishi.

Therefore, notwithstanding the lack of motivation required to combine the disclosures of Dybjaer and Igarashi, at least for the reasons set forth above, the combined teachings of these references still fail to arrive at the process recited in amended Claim 1 as a whole. Accordingly, the combined teachings of Dybjaer and Igarashi cannot form the basis of a proper *prima facie* case of obviousness. Thus, it is respectfully asserted that the instant rejection is in error and should be withdrawn.

**Double Patenting Rejections**

The Office Action has again rejected Claims 1 and 2 as allegedly being unpatentable under obviousness-type double patenting in view of the following documents:

1. claims 1-4 of copending application no. 09/743,530 in view of the journal article to Dybjkaer and further in view of U.S. Patent No. 5,167,865 to Igarashi *et al.*;
2. claims 1-9 of copending application no. 10/667,389 in view of the journal article to Dybjkaer and further in view of U.S. Patent No. 5,167,865 to Igarashi *et al.*;
3. claims 1-8 of copending application no. 10/667,392 in view of the journal article to Dybjkaer and further in view of U.S. Patent No. 5,167,865 to Igarashi *et al.*; and
4. claims 1-7 of copending application no. 10/668,295 in view of the journal article to Dybjkaer.

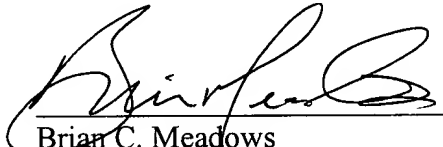
A Terminal Disclaimer for each of the co-pending application numbers 09/743,530; 10/667,389; 10/667,392; and 10/668,295 was previously submitted with the appropriate filing fee in Applicants' response dated August 24, 2004. While Applicants still do not concede these rejections, copies of the previously filed Terminal Disclaimers and the return postcard confirming the U.S. Patent and Trademark Office's timely receipt of same and filing fees are enclosed herein as Exhibits B,C, and D respectively, in order to expedite prosecution.

CONCLUSION

Pursuant to the above Amendments and Remarks, reconsideration and allowance of the pending application is believed to be warranted. The Examiner is hereby invited and encouraged to directly contact the undersigned if such contact may enhance the efficient prosecution of this application to issue.

A Credit Card Payment Form PTO-2038 authorizing payment in the amount of \$120.00 for the submission of the one-month extension of time is enclosed. This amount is believed to be correct; however, the Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 14-0629.

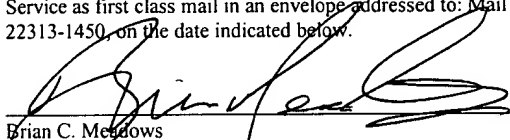
Respectfully submitted,  
NEEDLE & ROSENBERG, P.C.

  
Brian C. Meadows  
Reg. No 50,848

NEEDLE & ROSENBERG, P.C.  
Customer Number 23859  
(678) 420-9300  
(678) 420-9301 (fax)

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8

I hereby certify that this correspondence, including any items indicated as attached or included, is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated below.

  
Brian C. Meadows

4.1.2005  
Date

265929

LEXSEE 175 F.3D 994

IN RE ANITA DEMBICZAK and BENSON ZINBARG, Appellants.

98-1498

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

*175 F.3d 994; 1999 U.S. App. LEXIS 8109; 50 U.S.P.Q.2D (BNA) 1614*

April 28, 1999, Decided

**PRIOR HISTORY:** [**\*\*1**] Appealed from: Patent and Trademark Office Board of Patent Appeals and Interferences. (Serial No. 08/427,732).

**DISPOSITION:** REVERSED.

**LexisNexis(R) Headnotes**

**COUNSEL:** David P. Gordon, of Stamford, Connecticut, argued for appellant. Of counsel was Thomas A. Gallagher, of Stamford, Connecticut.

John M. Whealan, Associate Solicitor, Office of the Solicitor, of Arlington, Virginia, argued for appellee. With him on the brief were Albin F. Drost, Acting Solicitor, and David R. Nicholson, Associate Solicitor.

**JUDGES:** Before MAYER, Chief Judge, MICHEL and CLEVENGER, Circuit Judges.

**OPINIONBY:** CLEVENGER

**OPINION:** [**\*996**] CLEVENGER, Circuit Judge.

Anita Dembiczak and Benson Zinbarg appeal the rejection, upheld by the Board of Patent Appeals and Interferences, of all pending claims in their Application No. 08/427,732. See *Ex Parte Dembiczak*, No. 96-2648, slip op. at 43 (May 14, 1998). Because the Board erred in sustaining rejections of the pending claims as obvious under 35 U.S.C. § 103(a) (Supp. 1998), and for obviousness-type double patenting, we reverse.

I

The invention at issue in this case is, generally speaking, a large trash bag made of orange plastic and decorated with lines and facial features, allowing the bag, when filled [**\*\*2**] with trash or leaves, to resemble a Halloween-style pumpkin, or jack-o'-lantern. As the inventors, Anita Dembiczak and Benson Zinbarg (collectively, "Dembiczak") note, the invention solves the long-

standing problem of unsightly trash bags placed on the curbs of America, and, by fortuitous happenstance, allows users to express their whimsical or festive nature while properly storing garbage, leaves, or other household debris awaiting collection. Embodiments of the invention—sold under a variety of names, including Giant Stuff-A-Pumpkin TM, Funkins, Jack Sak TM, and Bag-O-Fun TM—have undisputedly been well-received by consumers, who bought more than seven million units in 1990 alone. Indeed, in 1990, the popularity of the pumpkin bags engendered a rash of thefts around Houston, Texas, leading some owners to resort to preventative measures, such as greasing the bags with petroleum jelly and tying them to trees. See R. Piller, "Halloween Hopes Die on the Vine," *Hous. Chron.*, Oct. 19, 1990, at 13A.

The road to profits has proved much easier than the path to patentability, however. In July 1989, Dembiczak filed a utility patent application generally directed to the pumpkin bags. [**\*\*3**] In a February 1992 appeal, the Board of Patent Appeals and Interferences ("the Board") reversed the Examiner's rejection, but entered new grounds for rejection. Dembiczak elected to continue prosecution, filing a continuation application to address the new grounds for rejection. Thereafter, the invention made a second appearance before the Board, in April 1993, when the Board both sustained the Examiner's rejection and again entered new grounds for rejection. Again, a continuation application was filed (the instant application). And again the Examiner's rejection was appealed to the Board, which sustained the rejection in a May 14, 1998, decision. See *Dembiczak*, slip op. at 43.

A

The patent application at issue includes claims directed to various embodiments of [**\*997**] the pumpkin bag. Claims 37, 49, 51, 52, 58 through 64, 66 through 69, and 72 through 81 are at issue in this appeal. Though the claims vary, independent claim 74 is perhaps most representative:

74. A decorative bag for use by a user with

trash filling material, the bag simulating the general outer appearance of an outer surface of a pumpkin having facial indicia thereon, comprising:

a flexible waterproof plastic [\*\*4] trash or leaf bag having

an outer surface which is premanufactured orange in color for the user to simulate the general appearance of the outer skin of a pumpkin, and having

facial indicia including at least two of an eye, a nose and a mouth on the orange color outer surface for forming a face pattern on said orange color outer surface to simulate the general outer appearance of a decorative pumpkin with a face thereon,

said trash or leaf bag having first and second opposite ends, at least said second end having an opening extending substantially across the full width of said trash or leaf bag for receiving the trash filling material,

wherein when said trash or leaf bag is filled with trash filling material and closed, said trash or leaf bag takes the form and general appearance of a pumpkin with a face thereon.

All of the independent claims on appeal, namely 37, 52, 72, and 74, contain limitations that the bag must be "premanufactured orange in color," have "facial indicia," have openings suitable for filling with trash material, and that when filled, the bag must have a generally rounded appearance, like a pumpkin. Independent claims 37, 52, and 72 add the [\*\*5] limitation that the bag's height must at least 36 inches. Claim 72 requires that the bag be made of a "weatherproof material," and claim 74, as shown above, requires that the bag be "waterproof." Claim 52 recites a "method of assembling" a bag with the general characteristics of apparatus claim 37.

## B

The prior art cited by the Board includes:

(1) pages 24-25 of a book entitled "A Handbook for Teachers of Elementary Art," by Holiday Art Activities ("Holiday"), describing how to teach children to make a "Crepe Paper Jack-O-Lantern" out of a strip of orange crepe paper, construction paper cut-outs in the shape of facial features, and

"wadded newspapers" as filling;

(2) page 73 of a book entitled "The Everything Book for Teachers of Young Children," by Martha Shapiro and Valerie Indenbaum ("Shapiro"), describing a method of making a "paper bag pumpkin" by stuffing a bag with newspapers, painting it orange, and then painting on facial features with black paint;

(3) U.S. Patent No. 3,349,991 to Leonard Kessler, entitled "Flexible Container" ("Kessler"), describing a bag apparatus wherein the bag closure is accomplished by the use of folds or gussets in the bag material;

(4) [\*\*6] U.S. Patent No. Des. 310,023, issued August 21, 1990 to Dembiczak ("Dembiczak '023"), a design patent depicting a bag with a jack-o'-lantern face;

(5) U.S. Patent No. Des. 317,254, issued June 4, 1991 to Dembiczak ("Dembiczak '254"), a design patent depicting a bag with a jack-o'-lantern face; and,

(6) Prior art "conventional" plastic lawn or trash bags ("the conventional trash bags").

Using this art, the Board affirmed the Examiner's final rejection of all the independent claims (37, 52, 72, 74) under 35 U.S.C. § 103, [\*\*998] holding that they would have been obvious in light of the conventional trash bags in view of the Holiday and Shapiro references. The Board determined that, in its view of the prior art, "the only difference between the invention presently defined in the independent claims on appeal and the orange plastic trash bags of the prior art and the use of such bags resides in the application of the facial indicia to the outer surface of the bag." Dembiczak, slip op. at 18. The Board further held that the missing facial indicia elements were provided by the Holiday and Shapiro references' description of painting jack-o'-lantern faces on paper bags. See [\*\*7] id. at 18-19. Dependent claims 49 and 79, which include a "gussets" limitation, were considered obvious under similar reasoning, except that the references cited against them included Kessler. See id. at 7.

The Board also affirmed the Examiner's obviousness-type double patenting rejection of all the independent claims in light of the two Dembiczak design patents ('023 and '254) and Holiday. See id. at 12. The Board held that the design patents depict a generally rounded bag



with jack-o'-lantern facial indicia, and that the Holiday reference supplies the missing limitations, such as the "thin, flexible material" of manufacture, the orange color, the initially-open upper end, and the trash filling material. The Board also stated that the various limitations of the dependent claims—e.g., color, the inclusion of leaves as stuffing, and the dimensions—would all be obvious variations of the depictions in the Dembiczak design patents. See *id.* at 8–9. In addition, using a two-way test for obviousness-type double patenting, the Board held that the claims of the Dembiczak design patents "do not exclude" the additional structural limitations of the pending utility claims, [\*\*8] and thus the design patents were merely obvious variations of the subject matter disclosed in the utility claims. See *id.* at 11. The Board further upheld, on similar grounds and with the inclusion of the Kessler reference, the obviousness-type double patenting rejection of dependent claim 49. See *id.* at 12.

This appeal followed, vesting this court with jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A) (1994).

## II

A claimed invention is unpatentable if the differences between it and the prior art "are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. § 103(a) (Supp. 1998); see *Graham v. John Deere Co.*, 383 U.S. 1, 14, 148 U.S.P.Q. (BNA) 459, 465, 15 L. Ed. 2d 545, 86 S. Ct. 684 (1966). The ultimate determination of whether an invention is or is not obvious is a legal conclusion based on underlying factual inquiries including: (1) the scope and content of the prior art; (2) the level of ordinary skill in the prior art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness. See *Graham*, 383 U.S. at 17–18, 148 U.S.P.Q. (BNA) [\*\*9] at 467; *Miles Labs, Inc. v. Shandon Inc.*, 997 F.2d 870, 877, 27 U.S.P.Q.2D (BNA) 1123, 1128 (Fed. Cir. 1993). We therefore review the ultimate determination of obviousness without deference to the Board, while examining any factual findings for clear error. See, e.g., *In re Zurko*, 142 F.3d 1447, 1459, 46 U.S.P.Q.2D (BNA) 1691, 1700 (Fed. Cir.) (en banc), cert. granted, 119 S. Ct. 401 (1998).

## A

Our analysis begins in the text of section 103 quoted above, with the phrase "at the time the invention was made." For it is this phrase that guards against entry into the "tempting but forbidden zone of hindsight," see *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 873, 228 U.S.P.Q. (BNA) 90, 98 (Fed. Cir. 1985), overruled on other grounds by *Nobelpharma AB v. Implant Innovations, Inc.*, 141

*F.3d 1059*, 46 U.S.P.Q.2D (BNA) 1097 [\*\*999] (Fed. Cir. 1998), when analyzing the patentability of claims pursuant to that section. Measuring a claimed invention against the standard established by section 103 requires the oft-difficult but critical step of casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted [\*\*10] wisdom in the field. See, e.g., *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 U.S.P.Q. (BNA) 303, 313 (Fed. Cir. 1983). Close adherence to this methodology is especially important in the case of less technologically complex inventions, where the very ease with which the invention can be understood may prompt one "to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher." *Id.*

Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. See, e.g., *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1352, 48 U.S.P.Q.2D (BNA) 1225, 1232 (Fed. Cir. 1998) (describing "teaching or suggestion or motivation [to combine]" as an "essential evidentiary component of an obviousness holding"); *In re Rouffet*, 149 F.3d 1350, 1359, 47 U.S.P.Q.2D (BNA) 1453, 1459 (Fed. Cir. 1998) ("the Board must identify specifically . . . the reasons one of ordinary skill in the art would have been motivated to select [\*\*11] the references and combine them"); *In re Fritch*, 972 F.2d 1260, 1265, 23 U.S.P.Q.2D (BNA) 1780, 1783 (Fed. Cir. 1992) (examiner can satisfy burden of obviousness in light of combination "only by showing some objective teaching [leading to the combination]"); *In re Fine*, 837 F.2d 1071, 1075, 5 U.S.P.Q.2D (BNA) 1596, 1600 (Fed. Cir. 1988) (evidence of teaching or suggestion "essential" to avoid hindsight); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 297, 227 U.S.P.Q. (BNA) 657, 667 (Fed. Cir. 1985) (district court's conclusion of obviousness was error when it "did not elucidate any factual teachings, suggestions or incentives from this prior art that showed the propriety of combination"). See also *Graham*, 383 U.S. at 18, 148 U.S.P.Q. (BNA) at 467 ("strict observance" of factual predicates to obviousness conclusion required). Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight. See, e.g., *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1138, 227 U.S.P.Q. (BNA) 543, 547 (Fed. Cir. 1985) ("The invention [\*\*12] must be viewed not with the blueprint drawn by the inventor, but in the state of the

art that existed at the time." In this case, the Board fell into the hindsight trap.

We have noted that evidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, see *Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573, 37 U.S.P.Q.2D (BNA) 1626, 1630 (Fed. Cir. 1996), *Para-Ordnance Mfg. v. SGS Imports Intern., Inc.*, 73 F.3d 1085, 1088, 37 U.S.P.Q.2D (BNA) 1237, 1240 (Fed. Cir. 1995), although "the suggestion more often comes from the teachings of the pertinent references," *Rouffet*, 149 F.3d at 1355, 47 U.S.P.Q.2D (BNA) at 1456. The range of sources available, however, does not diminish the requirement for actual evidence. That is, the showing must be clear and particular. See, e.g., *C.R. Bard*, 157 F.3d 1340 at 1352, 48 U.S.P.Q.2D (BNA) at 1232. Broad conclusory statements regarding the teaching of multiple references, standing alone, are not "evidence." E.g., *McElmurry v. Arkansas Power & Light Co.*, 995 F.2d 1576, 1578, 27 U.S.P.Q.2D (BNA) [\*13] 1129, 1131 (Fed. Cir. 1993) ("Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of [\*1000] material fact."); *In re Sichert*, 566 F.2d 1154, 1164, 196 U.S.P.Q. (BNA) 209, 217 (CCPA 1977) ("The examiner's conclusory statement that the specification does not teach the best mode of using the invention is unaccompanied by evidence or reasoning and is entirely inadequate to support the rejection."). In addition to demonstrating the propriety of an obviousness analysis, particular factual findings regarding the suggestion, teaching, or motivation to combine serve a number of important purposes, including: (1) clear explication of the position adopted by the Examiner and the Board; (2) identification of the factual disputes, if any, between the applicant and the Board; and (3) facilitation of review on appeal. Here, however, the Board did not make particular findings regarding the locus of the suggestion, teaching, or motivation to combine the prior art references.

All the obviousness rejections affirmed by the Board resulted from a combination of prior art references, e.g., the conventional trash or yard bags, and the Holiday and Shapiro publications teaching [\*14] the construction of decorated paper bags. See *Dembiczak*, slip op. at 6-7. To justify this combination, the Board simply stated that "the Holiday and Shapiro references would have suggested the application of . . . facial indicia to the prior art plastic trash bags." *Id.* at 18-19. However, rather than pointing to specific information in Holiday or Shapiro that suggest the combination with the conventional bags, the Board instead described in detail the similarities between the Holiday and Shapiro references and the claimed invention, noting that one reference or the other—in com-

bination with each other and the conventional trash bags—described all of the limitations of the pending claims. See *id.* at 18-28. Nowhere does the Board particularly identify any suggestion, teaching, or motivation to combine the children's art references (Holiday and Shapiro) with the conventional trash or lawn bag references, nor does the Board make specific—or even inferential—findings concerning the identification of the relevant art, the level of ordinary skill in the art, the nature of the problem to be solved, or any other factual findings that might serve to support a proper obviousness [\*15] analysis. See, e.g., *Pro-Mold & Tool*, 75 F.3d at 1573, 37 U.S.P.Q.2D (BNA) at 1630.

To the contrary, the obviousness analysis in the Board's decision is limited to a discussion of the ways that the multiple prior art references can be combined to read on the claimed invention. For example, the Board finds that the Holiday bag reference depicts a "premanufactured orange" bag material, see *Dembiczak*, slip op. at 21, finds that Shapiro teaches the use of paper bags in various sizes, including "large", see *id.* at 22-23, and concludes that the substitution of orange plastic for the crepe paper of Holiday and the paper bags of Shapiro would be an obvious design choice, see *id.* at 24. Yet this reference-by-reference, limitation-by-limitation analysis fails to demonstrate how the Holiday and Shapiro references teach or suggest their combination with the conventional trash or lawn bags to yield the claimed invention. See *Rouffet*, 149 F.3d at 1357, 47 U.S.P.Q.2D (BNA) at 1459 (noting Board's failure to explain, when analyzing the prior art, "what specific understanding or technical principle . . . would have suggested the combination"). Because we do not discern any finding by [\*16] the Board that there was a suggestion, teaching, or motivation to combine the prior art references cited against the pending claims, the Board's conclusion of obviousness, as a matter of law, cannot stand. See *C.R. Bard*, 157 F.3d at 1352, 48 U.S.P.Q.2D (BNA) at 1232; *Rouffet*, 149 F.3d at 1359, 47 U.S.P.Q.2D (BNA) at 1459; *Fritch*, 972 F.2d at 1265, 23 U.S.P.Q.2D (BNA) at 1783; *Fine*, 837 F.2d at 1075, 5 U.S.P.Q.2D (BNA) at 1600; *Ashland Oil*, 776 F.2d at 297, 227 U.S.P.Q. (BNA) at 667.

## B

The Commissioner of Patents and Trademarks ("Commissioner") attempts to justify the Board's decision on grounds [\*1001] different from that relied upon by the Board, arguing that one of ordinary skill in the art would have been motivated to combine the references. Of course, in order to do so, the Commissioner must do what the Board did not do below: make specific findings of fact regarding the level of skill in the art ("a designer and manufacturer of trash and leaf bags, par-

ticularly one specializing in the ornamental and graphic design of such bags"), Resp't Br. at 14, the relationship between the fields of conventional trash bags and children's crafts, respectively ("the artisan would also have been well aware of the ancillary, [\*\*17] corollary, and atypical uses of 'trash' bags such as their application in hobby and art projects"), Resp't Br. at 15, and the particular features of the prior art references that would motivate one of ordinary skill in a particular art to select elements disclosed in references from a wholly different field ("a designer and manufacturer of trash and leaf bags would have recognized the paper bag in Shapiro to be a trash bag and therefore would have been motivated to combine it with the admitted prior art plastic trash and leaf bags to arrive at the claimed invention"), Resp't Br. at 15. The Commissioner also appears to cite additional references in support of his obviousness analysis, noting that at least two design patents (in the record but not cited against the presently pending claims) teach the placement of "graphical information, including text, designs, and even facial indicia, to colored bags." Resp't Br. at 16. This new analysis, apparently cut from whole cloth in view of appeal, does little more than highlight the shortcomings of the decision below, and we decline to consider it. See, e.g., *In re Robertson*, 1999 U.S. App. LEXIS 3224, 169 F.3d 743, 746, [\*\*18] 49 U.S.P.Q.2D (BNA) 1949, 1951 (Fed. Cir. 1999) ("We decline to consider [the Commissioner's] newly-minted theory as an alternative ground for upholding the agency's decision."); *In re Soni*, 54 F.3d 746, 751, 34 U.S.P.Q.2D (BNA) 1684, 1688 (Fed. Cir. 1995); *In re Hounsfeld*, 699 F.2d 1320, 1324, 216 U.S.P.Q. (BNA) 1045, 1049 (Fed. Cir. 1983) (rejecting an "attempt[] by the Commissioner 'to apply a new rationale to support the rejection.'"); see also 35 U.S.C. § 144 (1994) (an appeal to the Federal Circuit "is taken on the record before The Patent and Trademark Office"). Because the Board has not established a prima facie case of obviousness, see *In re Bell*, 991 F.2d 781, 783, 26 U.S.P.Q.2D (BNA) 1529, 1531 (Fed. Cir. 1993) ("The PTO bears the burden of establishing a case of prima facie obviousness."), we therefore reverse the obviousness rejections, and have no need to address the parties' arguments with respect to secondary factors.

### III

Dembiczak also asks this court to reverse the Board's rejection of the pending claims for obviousness-type double patenting, which is a judicially-created doctrine that seeks to prevent the applicant from expanding the grant of the patent right beyond the [\*\*19] limits prescribed in Title 35. See, e.g., *In re Braat*, 937 F.2d 589, 592, 19 U.S.P.Q.2D (BNA) 1289, 1291-92 (Fed. Cir. 1991); *In re Longi*, 759 F.2d 887, 892, 225 U.S.P.Q. (BNA) 645, 648 (Fed. Cir. 1985). See also 35 U.S.C. § 154(a)(2) (Supp.

1998) (discussing patent term). The doctrine prohibits claims in a second patent which define "merely an obvious variation" of an invention claimed by the same inventor in an earlier patent. *Braat*, 937 F.2d at 592, 19 U.S.P.Q.2D (BNA) at 1292 (quoting *In re Vogel*, 57 C.C.P.A. 920, 422 F.2d 438, 441, 164 U.S.P.Q. (BNA) 619, 622 (CCPA 1970)). Thus, unless a claim sought in the later patent is patentably distinct from the claims in an earlier patent, the claim must be rejected. See *In re Goodman*, 11 F.3d 1046, 1052, 29 U.S.P.Q.2D (BNA) 2010, 2015 (Fed. Cir. 1993); *Vogel*, 422 F.2d at 441, 164 U.S.P.Q. (BNA) at 622. This question is one of law, which we review de novo. See *Goodman*, 11 F.3d at 1052, 29 U.S.P.Q.2D (BNA) at 2015; *Texas Instruments Inc. v. United States Int'l Trade Comm'n*, 988 F.2d 1165, 1179, 26 U.S.P.Q.2D (BNA) 1018, 1029 (Fed. Cir. 1993).

### [\*1002] A

The law provides that, in some very rare cases, obvious-type double patenting may be found between design and utility patents. [\*\*20] See *Carman Indus., Inc. v. Wahl*, 724 F.2d 932, 939-40, 220 U.S.P.Q. (BNA) 481, 487 (Fed. Cir. 1983) (noting that, while theoretically possible, "double patenting is rare in the context of utility versus design patents"); *In re Thorington*, 57 C.C.P.A. 759, 418 F.2d 528, 536-37, 163 U.S.P.Q. (BNA) 644, 650 (CCPA 1969) (Double patenting between a design and utility patent is possible "if the features producing the novel aesthetic effect of a design patent or application are the same as those recited in the claims of a utility patent or application as producing a novel structure."); *In re Phelan*, 40 C.C.P.A. 1023, 205 F.2d 183, 98 U.S.P.Q. (BNA) 156 (CCPA 1953); *In re Barber*, 23 C.C.P.A. 834, 81 F.2d 231, 28 U.S.P.Q. (BNA) 187 (CCPA 1936); *In re Hargraves*, 19 C.C.P.A. 784, 53 F.2d 900, 11 U.S.P.Q. (BNA) 240 (CCPA 1931). In these cases, a "two-way" test is applicable. See *Carman*, 724 F.2d at 940, 220 U.S.P.Q. (BNA) at 487. Under this test, the obviousness-type double patenting rejection is appropriate only if the claims of the two patents cross-read, meaning that "the test is whether the subject matter of the claims of the patent sought to be invalidated would have been obvious from the subject matter of the claims of the [\*\*21] other patent, and vice versa." *Id.*, 220 U.S.P.Q. (BNA) at 487. See also *Braat*, 937 F.2d at 593, 19 U.S.P.Q.2D (BNA) at 1292 (explaining two-way test).

### B

In making its double patenting rejection, the Board concluded that all but one of the pending claims of Dembiczak's utility application would have been merely an obvious variation of the claims of the earlier-issued design patents—the Dembiczak '023 and '254 references—in light of the Holiday reference. The remaining claim,

dependent claim 49, was judged obvious in light of the combination of the Dembiczak design patents, Holiday, and the Kessler reference.

Acknowledging that the two-way test was required by *Carman*, 724 F.2d at 940, 220 U.S.P.Q. (BNA) at 487, the Board concluded that "the design claimed in each of appellants' design patents does not exclude the features pertaining to the construction and color of the bag, the use of a plastic material for making the bag, the size or thickness of the bag . . . or the use of various types of filling material . . . . The particular details of the facial indicia would have been a matter of design choice as evidenced by the Holiday handbook," and that therefore, in view of Holiday, the claims of the [\*\*22] design patents were obvious variants of the pending utility patent claims. See Dembiczak, slip op. at 11. We disagree. In order for a design to be unpatentable because of obviousness, there must first be a basic design reference in the prior art, the design characteristics of which are "basically the same as the claimed design." *In re Borden*, 90 F.3d 1570, 1574, 39 U.S.P.Q.2D (BNA) 1524, 1526 (Fed. Cir. 1996); *In re Rosen*, 673 F.2d 388, 391, 213 U.S.P.Q. (BNA) 347, 350 (CCPA 1982). The phrase "having facial indicia thereon" found in the claims of the pending utility application is not a design reference that is "basically the same as the claimed design." *Borden*, 90 F.3d at 1574, 39 U.S.P.Q.2D (BNA) at 1526. In fact, it describes precious little with respect to design characteristics. The Board's suggestion that the design details were simply "a matter of design choice" evinces a misapprehension of the subject matter of design patents. E.g., *Carman*, 724 F.2d at 939 n.13, 220 U.S.P.Q. (BNA) at 486 n.13 ("Utility patents afford protection for the mechanical structure and function of an invention whereas design patent protection concerns the ornamental or aesthetic features of a design.") Indeed, we note [\*\*23] that the two design patents at issue here—the Dembiczak '023 and '254 patents—were considered nonobvious over each other, and were even the subject

of a restriction requirement. See 35 U.S.C. § 121 (1994) ("If two or more independent and distinct inventions are claimed in one [\*1003] application, the Commissioner may require the application to be restricted to one of the inventions."); 37 C.F.R. § 1.142. The position adopted by the Board—that a textual description of facial indicia found in the claims of the utility patent application makes obvious the specific designs claimed in the (patentably distinct) Dembiczak design patents—would presumably render obvious, or even anticipate, all design patents where a face was depicted on a bag. But this, of course, is not the law; the textual description cannot be said to be a reference "basically the same as the claimed design," of the design patents at issue here. *Borden*, 90 F.3d at 1574, 39 U.S.P.Q.2D (BNA) at 1526 (internal quotation marks omitted). The Board's conclusion of obviousness is incorrect.

Because we find that the Board erred in concluding that the design patents were obvious variants of the pending utility claims, we need not address [\*\*24] the other prong of the two-way double patenting test—whether the pending utility claims are obvious variations of the subject matter claimed in the design patents. See *Carman*, 724 F.2d at 939, 220 U.S.P.Q. (BNA) at 487 (both prongs of the two-way test required for obviousness-type double patenting). The double patenting rejections are reversed.

#### IV

Because there is no evidence in the record of a suggestion, teaching, or motivation to combine the prior art references asserted against the pending claims, the obviousness rejections are reversed. In addition, because the Board misapprehended the test for obviousness-type double patenting, and because the pending utility claims do not render obvious the design patents, the double patenting rejections are also reversed.

REVERSED

RECEIVED IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
**RECEIVED**

COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, VA 22313-1450

SEP 03 2004

**NEEDLE & ROSENBERG**

SIR: PLEASE ACKNOWLEDGE RECEIPT OF THE ENCLOSED:



- 1-Amendment Transmittal (2 pgs.)
- 2-Response to OA (7 pgs.)
- 3-Request for EOT (2-Month) (2 pgs.)
- 4-Terminal Disclaimer (3 pgs.)
- 5-Terminal Disclaimer and Declaration Under 37 CFR § 1.130(a)
- 6-Two (2) Credit Card Payment Form(s) PTO 2358 in the amounts of \$420.00 and \$220.00 for payment of Request for 2-Month Extension of Time and two (2) Terminal Disclaimer documents @ \$110.00 ea.
- 7-Certificate of Mailing dated August 24, 2004
- 8-Return postcard

IN RE APPLICATION OF: Dybkjaer *et al.*

TITLE: SYNTHESIS GAS PRODUCTION BY STEAM REFORMING

SERIAL NO.: 09/743,528

FILED: March 29, 2001

ATTORNEY DOCKET NO.: 07089.0010U1

LAV/dir

Exhibit C  
Page 1 of 3  
Docket No.: 07089.0010U1



ATTORNEY DOCKET NO. 07089.0010U1  
PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of	)	
	)	
Dybkaer <i>et al.</i>	)	
	)	Group Art Unit: 1764
Application No.: 09/743,528	)	
	)	Examiner: Ridley, B.
Filed: March 29, 2001	)	
	)	Confirmation No. 4036
FOR: SYNTHESIS GAS PRODUCTION BY	)	
STEAM REFORMING	)	

**TERMINAL DISCLAIMER**

Petitioner, HALDOR TOPSOE A/S, is the assignee and exclusive owner of the entire interest in Application No. 09/743,528 referenced above, which is an application under 35 U.S.C. § 371 of international application number PCT/EP98/04563, as evidenced by an Assignment from the inventors, Ib Dybkaer, Peter Seier Christensen, Vigo Lucassen Hansen and J.R. Rostrup-Nielsen to HALDOR TOPSOE A/S, recorded at Reel/Frame 011669/0900.

HALDOR TOPSOE A/S hereby disclaims the terminal part of any patent granted on the above-identified application, which would extend beyond the expiration date of any patent indicated below, and/or the expiration date of any payment which may issue on any application indicated below:

1. U.S. Application No. 09/743,530;
2. U.S. Application No. 10/667,389;
3. U.S. Application No. 10/667,392; and/or
4. U.S. Application No. 10/668,295

and shall be enforceable only for and during such period that the legal title to said patent shall be the same as the legal title to U.S. Application No. 09/743,528. This agreement shall run with any

patent granted on the above-identified application and be binding upon the grantee, its successors or assigns.

In making the above disclaimer, HALDOR TOPSOE A/S does not disclaim any terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. §§ 154 to 156 and 173 of the prior patent, as presently shortened by any terminal disclaimer, in the event that it later: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 C.F.R. § 1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

I, the undersigned, whose title is given below, am empowered to represent the assignee, HALDOR TOPSOE A/S. I have reviewed all of the documents and the chain of title of the patent application, Serial No. 09/743,528, identified above and to the best of my knowledge and belief all right, title and interest in the above-identified patent application resides with the HALDOR TOPSOE A/S.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements and the like so made are

Exhibit C  
Page 3 of 3  
Docket No.: 07089.0010U1

ATTORNEY DOCKET NO. 07089.0010U1  
Application No. 09/743,528

punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application of any patent issuing thereon.

HALDOR TOPSØE A/S

Name: Giorgio Girola

Title: Managing Director

Signature: 

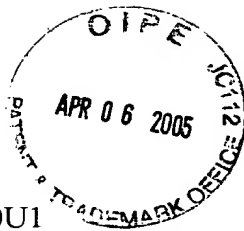
Date: 28 July 2004

220591

HALDOR TOPSØE A/S  
Nymøllevej 55  
DK-2800 Lyngby  
Denmark



Exhibit D  
Page 1 of 3  
Docket No.: 07089.0010U1



ATTORNEY DOCKET NO. 07089.0010U1  
PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of	)	
	)	
Dybkjaer <i>et al.</i>	)	
	)	Group Art Unit: 1764
Application No.: 09/743,528	)	
	)	Examiner: Ridley, B.
Filed: March 29, 2001	)	
	)	Confirmation No. 4036
FOR: SYNTHESIS GAS PRODUCTION BY	)	
STEAM REFORMING	)	

**TERMINAL DISCLAIMER AND DECLARATION UNDER 37 CFR § 1.130(a)**

Petitioner, HALDOR TOPSOE A/S, is the assignee and exclusive owner of the entire interest in Application No. 09/743,528 referenced above, which is an application under 35 U.S.C. § 371 of international application number PCT/EP98/04563, as evidenced by an Assignment from the inventors, Ib Dybkjaer, Peter Seier Christensen, Vigo Lucassen Hansen and J.R. Rostrup-Nielsen to HALDOR TOPSOE A/S, recorded at Reel/Frame 011669/0900. HALDOR TOPSOE A/S is also the assignee and exclusive owner of the entire interest in U.S. Patent No. 5,932,141, recorded at Reel/Frame 008968/0451.

HALDOR TOPSOE A/S hereby disclaims the terminal part of any patent granted on the above-identified application, which would extend beyond the expiration date of U.S. Patent No. 5,932,141, and shall be enforceable only for and during such period that the legal title to said patent shall be the same as the legal title to U.S. Application No. 09/743,528. This agreement shall run with any patent granted on the above-identified application and be binding upon the grantee, its successors or assigns.

In making the above disclaimer, HALDOR TOPSOE A/S does not disclaim any terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. §§ 154 to 156 and 173 of the prior patent, as presently shortened by any terminal disclaimer, in the event that it later: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 C.F.R. § 1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

I, the undersigned, whose title is given below, am empowered to represent the assignee, HALDOR TOPSOE A/S. I have reviewed all of the documents and the chain of title of the patent application, Serial No. 09/743,528, identified above and to the best of my knowledge and belief all right, title and interest in the above-identified patent application resides with the HALDOR TOPSOE A/S.

I, the undersigned, declare that the above-identified application and U.S. Patent No. 5,932,141 are currently owned by HALDOR TOPSOE A/S, and that the inventor named in the above-identified application is the prior inventor under 35 § U.S.C. 104.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements and the like so made are

Exhibit D  
Page 3 of 3  
Docket No.: 07089.0010U1

ATTORNEY DOCKET NO. 07089.0010U1  
Application No. 09/743,528

punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application of any patent issuing thereon.

HALDOR TOPSOE A/S

Name: GIORGIO GIROLA

Title: Managing Director

Signature: 

Date: 28 July 2004

HALDOR TOPSØE A/S  
Nymøllevej 55  
DK-2800 Lyngby  
Denmark

226030